

TAG - Chemistry Learning Targets

Use the table below to keep track of your learning of each of the sub-targets. Place a check mark in the appropriate column. If you do not place a check mark in the “M” column, you should determine what the necessary next step should be to “master” that target (re-read the book/class notes, see the teacher, go to the Point, etc.). ALL sub-targets should have an “X” in the “M” column PRIOR to you taking the quiz/test!

M - Indicates that you have “**m**astered” the learning target.

P - Indicates that you have “**p**artially **m**astered” the learning target, but need to PRACTICE to work toward complete mastery.

NY - Indicates “**n**ot **y**et.” You have not yet addressed the learning target.

You can use the notes section below to write down questions you have, or ideas to help you remember the concepts above.

General Topics: Physical change, Chemical change, Phase change, Bohr Models, Periodic Table arrangement, Atomic structure, Compounds, Molecules, Elements, Balancing Chemical Equations, and the Law of Conservation of Mass

M	P	NY	Learning Sub-Targets
			1. I can differentiate between physical and chemical change and provide examples of each. Differentiate between physical property (density) or chemical property (reactivity)
			2. I can explain and graph phase change of a substance showing the relationship between temperature and energy / time. I can graph phase change showing the relationship between temperature and pressure. I can rationally explain the molecular arrangement of a substance as energy is being absorbed or released during a phase change.
			3. I can explain and draw the Bohr model. I understand that an atom is made up of protons, neutrons and electrons. I can visualize the arrangement of these particles and understand that an atom is made up mostly of empty space given the distance between the nucleus and the electrons. I understand that protons identify the atom. Also know gluons, mesons and quarks (5a, 5b)
			4. I understand that electrons have designated energy levels but are not in a true orbit around the nucleus, but an electron cloud. Valence electrons determine reactivity and group location on the Periodic Table (5b)
			5. I can explain the difference between an element, compound and molecule and I can differentiate between a pure substance and a mixture. I can provide evidence that a compound as well as an element are both pure substances.
			6. I can explain and diagram the differences between an Ionic and Covalent bond. I understand that chemical formulas are used to identify substances and determine the number of atoms of each element in a molecule. (5d)
			7. I understand that a chemical equation is a symbolic representation of a chemical reaction. (Reactants and Products) I can balance a chemical equation and know that evidence of a chemical reaction is the creation of a new substance.(subscripts and coefficients) (5e, 5f)
			8. I understand that when a chemical reaction occurs bonds either being broken or formed creating new substances (compounds or molecules)
			9. I can clearly explain the Law of Conservation of Mass and explain its significance relative to balancing chemical equations.
			10. I understand, can explain and diagram how the Periodic Table is organized based on groups / families and periods. Elements in the same groups have similar chemical properties. Elements in the same period have same number of energy levels. I can also determine the location of metals,

			nonmetals and metalloids.(5c)
			11. I can determine the number of protons, neutrons, electrons, valence electrons, oxidation numbers and the total number of energy levels each element has in its arrangement.
			12. I can explain the contributions of Neils Bohr, Ernest Rutherford, James Dalton, JJ Thompson and Dimitri Mendeleev (3d)
			13. I can compare and contrast a decomposition and a synthesis reaction. As well as a single replacement and double replacement chemical equation.(endo and exothermic reactions)
			14. I understand the organization of the periodic table relative to s,p,d and f blocks. I also know the sequence that electrons fill around an atom.

Essential Questions:

How do elements and compounds differ and react?

How do chemical equations represent chemical reactions?

How do balanced equations support the Law of Conservation of Mass?

What are atoms made up of and explain how this arrangement suggests that atoms are mostly made up of empty space?

How is the Periodic Table arranged?

Notes: